

PATENT
540-011.2

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the matter of: Paavola et al)
Serial No:) Group Art Unit
Filed: Herewith) Examiner:
For: Aligned Mounting of a Photodetector)
Array in a Color Splitting Prism)

ASSISTANT COMMISSIONER OF PATENTS
WASHINGTON, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Please preliminarily amend the above-referenced application as follows:

In the Specification:

On page 1, prior to line 3, please insert a new heading as follows:

5 --Technical Field--.

On page 1, prior to line 10, please insert a new heading as follows:

--Background of the Invention--.

10 Express Mail No. EL628641677US

Please replace paragraph beginning at page 2, line 28 through page 3, line 2 with the following rewritten paragraph:

--Another problem related to the above described methods is that the glues shrink during the
5 hardening process and consequently move the CCD cell, and thus the CCD cells are not
reliably in their correct positions after the glue is hardened. On the other hand, while gluing
a CCD cell directly onto the prism, the viscosity of the glue and its uneven distribution result
in that the CCD cell is moved and must be aligned several times during the hardening
process of the glue. Moreover, the heating of the CCD cell during use creates internal
10 tensions in the glue layer, because the color splitting prism is not heated, or is heated at a
different pace than the cell, which may cause the cell alignment to change, or even the
element to fall off.--.

On page 3, prior to line 28, please insert a new heading as follows:

15 --Summary of the Invention--.

On page 4, prior to line 35, please insert a new heading as follows:

--Brief Description of the Drawings--.

20 On page 5, prior to line 19, please insert a new heading as follows:

--Best Mode for Carrying Out the Invention--.

In the Claims:

Please amend claims 1, 11, 23 and 27 as follows:

1 1. (Amended) A joining construction for mounting CCD cells of a color line
2 camera in an aligned fashion on a color splitting prism, which is attached to a prism housing,
3 said joining construction comprising: fastening elements having a length substantially larger
4 than the length of the CCD cell and extending from a housing margin on one side of a light
5 exit surface of said color splitting prism to another housing margin on the opposite side of
6 said light exit surface; a first glue joint between the CCD cell and its fastening element; and
7 third glue joints between said fastening element and said margins of the housing.

11. (Amended) A joining construction of claim 2, wherein the material of the
fastening element and the heat distribution pieces is metal, and that said metal is copper or
aluminum or an alloy of either of these.

1 23. (Amended) A method of claim 18, wherein the third glue is allowed to harden
2 prior to the fastening of the heat distribution pieces with the second glue.

1 27. (Amended) A method of claim 18, wherein the employed second glue are
2 thermally conductive glues, with a heat transfer coefficient of at least 0.6 W/m-K.

Please add the following claims:

1 29. (New) A joining construction of claim 1, wherein the material of the fastening
2 element and the heat distribution pieces is metal, and that said metal is copper or aluminum
3 or an alloy of either of these.

1 30. (New) A method of claim 17, wherein the third glue is allowed to harden
2 prior to the fastening of the heat distribution pieces with the second glue.

31. (New) A method of claim 17, wherein the employed second glue are
thermally conductive glues, with a heat transfer coefficient of at least 0.6 W/m-K.

In the Abstract:

Please replace paragraph beginning at line 1 of page 16 with the following rewritten
paragraph:

5 --Abstract of the Disclosure

The invention relates to a joining construction for mounting the CCD cells of a color line
camera on a color splitting prism (30) attached to a prism housing (2). Each CCD cell (6, 7,
8) is attached, by a first glue joint (13), to its fastening element (9), the length (L2) whereof
is essentially larger than the length (L1) of the CCD cell, and which fastening element (9)
10 extends from the housing margin (12a) located on one side of said exit surface (20a, 20b,

20c) of the color splitting prism to the other housing margin (12b) located on the opposite side thereof. East fastening element (9) is attached to said margins by third glue joints (11).--.

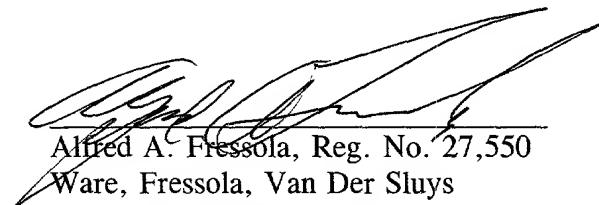
Remarks

This preliminary amendment is filed for the purpose of placing the application into standard U.S. format and to eliminate multiple dependent claims. Claims 1, 11, 23 and 27 have been amended and claims 29 - 30 have been added. Consideration and allowance of the claims is earnestly solicited.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made".

Respectfully submitted,

Date: 6/1/2001



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VERSION WITH MARKINGS TO SHOW CHANGES MADEIn the specification:

Paragraph beginning at page 2, line 28 through page 3, line 2 has been amended as follows:

Another problem related to the above described methods is that the glues shrink during the hardening process and consequently move the CCD cell, and thus the CCD cells are not reliably in their correct positions after the glue is hardened. On the other hand, while [Gluing] gluing a CCD cell directly onto the prism, the viscosity of the glue and its uneven distribution result in that the CCD cell is moved and must be aligned several times during the hardening process of the glue. Moreover, the heating of the CCD cell during use creates internal tensions in the glue layer, because the color splitting prism is not heated, or is heated at a different pace than the cell, which may cause the cell alignment to change, or even the element to fall off.

In the Claims:

Claims 1, 11, 23 and 27 have been amended as follows:

- 1 1. (Amended) A joining construction for mounting CCD cells of a color line
- 2 camera in an aligned fashion on a color splitting prism, which is attached to a prism housing,
- 3 said joining construction comprising: fastening elements having a length substantially larger

4 than the length of the CCD cell and extending from a housing margin on one side of a light
5 exit surface of said color splitting prism to another housing margin on the opposite side of
6 said light exit surface; a first glue joint between the CCD cell and its fastening element; and
7 third glue joints between said fastening element and said margins of the housing.

1 11. (Amended) A joining construction of claim [1 or] 2, wherein the material of
2 the fastening element and the heat distribution pieces is metal, and that said metal is copper
3 or aluminum or an alloy of either of these.

23. (Amended) A method of claim [17 or] 18, wherein the third glue is allowed
to harden prior to the fastening of the heat distribution pieces with the second glue.

27. (Amended) A method of claim [17 or] 18, wherein the employed second glue
are thermally conductive glues, with a heat transfer coefficient of at least 0.6 W/m-K.

In the Abstract:

Paragraph beginning at line 1 of page 16 has been amended as follows:

Abstract of the Disclosure

5 The invention relates to a joining construction for mounting the CCD cells of a color line
camera on a color splitting prism (30) attached to a prism housing (2). Each CCD cell (6, 7,
8) is attached, by a first glue joint (13), to its fastening element (9), the length (L2) whereof

is essentially larger than the length (L1) of the CCD cell, and which fastening element (9) extends from the housing margin (12a) located on one side of said exit surface (20a, 20b, 20c) of the color splitting prism to the other housing margin (12b) located on the opposite side thereof. Each fastening element (9) is attached to said margins by third glue joints (11).